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mingled together the fossil remains of different periods. That view he believed is now fully recognised, and it might be made to bear on that discussion. With respect to the fossil bones of an ass spoken of by Col. Fox, he was not aware that there is any difference osteologically between the bones of an ass and of a small horse, and he thought they were not to be distinguished in a fossil state.

Mr. CARTER BLAKE stated that there were clear proofs of a distinct osteological difference between the ass and the horse. There was a difference in the teeth, in the long bones in the skull, and in other particulars. There is a difference also in the texture of the bones, which on microscopical examination can be immediately detected.

Col. LANE FOX said there was a gouge found in the peat, made from a bone that was evidently older than the other bones.

Dr. CHARNOCK made some observations in answer to the remarks of the Rev. Dunbar Heath on the etymology of the name London, and the other Celtic names mentioned by him. The Welsh, *lli*, signifying a flood, flux, stream (found inverted in local names commencing with *al*, *el*, *il*, *ol*, *hul*), was liable to take the form of *lag*, *leg*, *lug*, *lid*, *lud*, *lon*, *lun*, *lyn*; hence Londinium, Lundinium, Lyndin, or London, which was precisely the same as Leyden in Holland, and Lyon in France, both of which were anciently written Lug-dunum. He thought London did not derive its name from its situation upon the Thames, but from some stream, perhaps the Fleet Ditch (which may have been anciently called the Lug, Lud, Lun, Lon), which flowed into it, and that the name London could mean none other than a "fortress or town on the water" (*lyn-din*, *lun-din*, *lan-dun*.)

The Rev. DUNBAR HEATH then read the following paper:—

On the way in which large bodies of Mute Men would acquire language from small bodies of Speaking Men. By the Rev. DUNBAR I. HEATH, M.A., Treas. A.S.L.

The distinction generally presupposed or stated as distinguishing mutes from speaking beings, is that the latter use distinct articulation while the former use only vowel cries or inarticulate sounds, as dogs and cats do, in expressing what they have to express. A little consideration, however, will show, that the character of the sounds produced, whether clear or confused, distinguished and articulate, or indistinguishable and inarticulate, has nothing at all to do with what we really mean by the power of speech or language. It will be easily seen that large numbers of the sounds habitually made in what is usually called speech by speaking men are the same as those made by dumb brutes, and large numbers of the sounds made by dumb brutes occur repeatedly in what are called the languages of mankind.

It would also be trivial to build up so fundamental a distinction as that between mutes and speakers on so unimportant a peculiarity as the mere sorts of sounds, or other signs, made use of. For the ground of such a distinction we must seek a peculiarity in some more advanced part of human nature than man's throat and chest, or even that lower emotional nature which he shares largely with beings beneath him.

The real distinction then between mutes and speakers will, I think,

be found to lie in the fact that all sounds used by mutes arise from individual emotion, and express emotion while the language of speakers (distinct from certain cries they may utter under strong emotion) actually diminishes by its use the individual *emotion* of the speaker, and expresses the *ideas or perceptions* common to the minds of the community of the speakers.

I wish my readers to understand, then, that by mute men I mean men who may or may not use words, but who only express emotions by them, and that such emotions are the *individual emotions* of the mute being; and by speaking men I mean men who can express ideas and perceptions by words or sounds or other signs, and that these ideas or perceptions are *common to the tribe* of speakers. I also wish it to be clearly understood that I am not writing and have never yet written on the origin of language, but on the transmission of language from tribe to tribe when once it has been acquired.

I am about to bring before the reader a conception of certain kitchen-middens occupied by what I call mutes, and subjected to the rationalising influences of a further advanced set of men whom I call speakers, and, that I may be as clearly understood as possible, I begin with forestalling a part of what I have to say further on.

I lay down therefore at once that, in my view of matters, every verb expressed in the first person singular is an expression of emotion or mental movement of the person moved. I love, I am cold, I hit, I count, I remember, being each of them individual or subjective states of mind, may, according to my view, be each of them expressed by a mute. To express the first person plural seems to me a step beyond emotion, which I call semi-emotion. We love, we are cold, express a state partly internal without ratio, and partly external or rational with ratio. The second and third persons, singular and plural, I make fully rational. The expression, thou art cold, is an expression of a perception or ratio between an external being and a state of temperature. I recognise in animal nature every variety of degree between reason and emotion. Here we have the simplest emotion, without any ratio or proportion at all in it to anything else, and there we have the very essence of ratio, reason, proportion, or comparison between any thing and anything.

A consideration of the physical apparatus and mental agency used in producing sounds will show that man and the higher brutes have them in common. The emotions also are common, but many ideas and perceptions on the other hand, created and vividly rationalised by the leaders of the human race, have no existence at all in the majority of mankind, and a very emotional one only in the intermediate classes. The loving Pocahontas of Virginia, the naked Anacaona of Hayti were as fully developed emotionally as Newton or Faraday. They loved indeed but too well, but were quite unable either to form or express the ideas of electrical current, or molecular polar forces. The rationalised perceptions of the highest men are not even now common to themselves and the lowest men, still less to them and the brutes.

If I were writing on the origin of language, I should be called upon to prove this my statement that language, in the proper sense of the

word, expresses ideas and perceptions common to a race, exclusive of individual emotions. I write, however, only upon the way in which men, whom I suppose or assume to express their common *ideas and perceptions* by certain sounds, would act upon other men whom I assume or suppose only to express their individual *emotions* by sounds, and if it had not been denied at the reading of my first paper that man in his mute state could maintain himself upon the earth, it would not be incumbent on me to familiarise my readers as I am now doing with the idea that every one of man's many wants and other emotions can be perfectly and fully expressed and understood without language, sufficiently so, at least, for the purpose of his existence.

The nature of things would seem to be enough to show that in order for man to exist we need do nothing more than supply his wants. The expression of ideas as well as wants is a great step beyond this, and is no doubt essential to man's progress and civilisation, but not to his existence, for brutes clearly exist without expressing them.

The power of expressing the emotion, "I want my food," is essential to continued social existence; but not the power of saying, "your food is in the next room." A dog knowing that its puppy's food is in the next room, nevertheless does not show its knowledge but its emotion strongly, by a sound and a push, the emotion, namely, of desire, that the puppy should go there; the puppy, understanding and yielding to this emotion, feeds and lives. The human infant in the same way yields to expressed emotion, not to expressed knowledge. The man, on the other hand, is able to diminish the necessity for emotion considerably, by expressing a perception common to him and the tribe. He simply says, "the food is there." He not only lives, but progresses.

I readily admit that a social being, placed even in a Garden of Eden, with ample food around him, would soon die off unless capable of expressing his own emotions, and understanding those of others; but, granting him an apparatus for producing articulate sounds, and granting pain and pleasure to prompt him to the proper use of it, I cannot see any shadow of a reason for supposing mute man less able to prolong his social existence, under suitable outward circumstances, than mute apes or other animals.

If it be allowed, then, that mute men, expressing their emotions, may maintain and increase their numbers on the earth under favourable circumstances, the next step is that we ask ourselves whether we have reason to contemplate mankind as having actually existed over vast areas and during long periods in this mute emotional state. Traditional views constitute the only reason I know of why we should not do so. Arguments on the other hand to show that we should be right in doing so, were given by me in my former paper; and it is in accordance with all that we know of nature, that reason should have been gradually acquired among men.

The passage, indeed, from an essentially mute or emotional to an essentially speaking or reasonable state in a community of beings living on this earth, under the conditions of what we call Nature, seems to me to be the last of those three largest changes which we

can conceive of in nature between the original chaos and the present state of things. That these three steps have been actually made seems allowed on all hands; but each of the three is still very generally attributed to miracle in confession of our ignorance. Time, however, it is no less generally admitted, was required for the first two of them, and what I say is that time was also required for the third.

Divide, then, the development of nature, between the nebular chaos and the present state of things, into the three most fundamental of all possible groups or divisions, and what are they? Obviously those which are comprised in the organisation of matter will form the earliest; those which bring these early organisms into a sensationised or emotionalised state must be the second; and the rationalising of emotions is the third; and no other such great change as either of these can be mentioned in the whole of the series. That vast time was taken in the organising of matter I take as a proven fact from the hands of geology and physical cosmogony. We mean by this that there was a vast time during which our mundane system contained matter without organism, and a further vast time during which organism was increasing in complexity before it arrived at its present state.

That there was also a vast time during which organisms existed without sensation is equally admitted. Vast is the step from unorganised matter to organism, but equally vast is that from organism to sensation. If the lowest organism is that which in the sunlight can simply decompose the inorganic carbonic acid, and appropriate to itself the carbon, there is no evidence of sensation accompanying such an act; nor have we in the whole phenomena of vegetable life any reason for supposing sensation. If, again, the lowest animal organism is that which can decompose the lowest vegetable organism, and join to itself its organic elements, there still appears in this no evidence of sensation. We admit, therefore, there was a vast period before evidence of sensation appeared, and that sensation has increased during vast periods in nature since its first appearance. Now the rationalising of sensation or emotion is, I say, a further step, distinct in kind from either of these two, and like these two I say it contains steps or stages, requiring vast periods of time for each of them, and requiring at a late stage, language. This process is still going on, and fresh conceptions are daily becoming the property of a more and more rationalised mankind, at a more rapid rate by far than at any former time in all mundane history. Now what I say is, that traditional views have insensibly caused even those who reject the Adam and Eve theory to suppose that the first man existed in a state of emotion sufficiently rationalised as to require speech, and I argue it in these papers as far more probable that he gained the great instrument for rationalisation at a period when he had already occupied large portions of the globe in a mere emotional or partially rationalised mute state.

That I may direct the thoughts of my readers into a channel which would lead I think to profitable results, I will give two instances of what I mean by rationalisation of emotion. One shall be in low mute mammal, the other in speaking man.

I will suppose, then, a low mute mammal, such as a tame guinea pig, to be taken by the inexorable boy who owns it for a series of nice warm water baths, on the plea that it is good for the wretched animal to have a washing. Now, judging from what I hear has happened in such a case, I understand that for the first time or two the animal shows mere abject emotion, by its utterance of piteous cries or squeals. At the third, or even second time, however, the emotion diminishes. The rationalised emotion becomes an idea of a something external to be resisted. Ratio or comparison begins to take place. The cry now becomes a grunt of anger, which is a less absorbing emotion than fear; and, like General Lee, the overpowered animal at the fourth time fights, bites and scratches to its very utmost, deserving a better fate.

In the next example rationalisation has advanced still further. Let the mute mammal be a speaking man, walking along a lonely road, and the inexorable boy a highway robber. A sensible or rationalised man, when met in such a case, feels neither fear, nor even anger. He recognises the inevitable, hands out at once his purse, and politely hopes the wife and family of the depredator are salubrious. Here the power of language enables the two parties so fully to understand each other, that the natural inward individual emotion passes wholly into an external interchange of ideas common to the two.

Now it will be found that even on the common Adam and Eve theory, when we give our attention carefully to the state of the supposed Adam and Eve, we find that a certain large amount of time—say three or four years at least—is required for the rationalisation of some of the most imperious emotions. Minds moulded by the traditional view have not yet dwelt sufficiently upon the great length of time required in the very nature of things for learning speech, even though many of them now take a very liberal and wide interpretation of the tradition.

Taking the tradition in its widest sense, let us suppose fifty Adams, each with his Eve, at different points of the earth's surface, and each created millions of years ago instead of six thousand. Fix the mind on any one of these couples, and follow them in their first lesson from their creator in rationalising the emotion of love, if they had such a lesson, or in their first unaided attempts to rationalise if they were unaided.

Adam then invented, or was taught, the method of saying, or expressing by some sort of sound, his individual emotion, "I love." This step, though it seems often described as the essence of language, is by no means a great one. Turtle-doves, cats, singing-birds, and animals in general have taken it. That Eve would make the same sound as Adam to express the same emotion in herself which Adam had expressed, is again only what we see takes place in other animals. Again, that each of them should also go on to say, "we love," would be a clear step forward towards language, but not a very extraordinary or difficult one. I do not know whether any animals have taken it. I should think it probable that a single dog saying to its master, "I want my food," would fall into the use of a somewhat different ex-

pression if a dozen other dogs were always clamouring by its side, and, if so, the semirationalised emotion, "we want our food," would become distinguishable in practice by the dog community. Many of the emotions are highly contagious and social, while others are as strongly individual, and if I were searching into the origin of language I should expect that the passage from the expression of emotion to that of reason would be found to take the path through these strong social sorts of emotion, on the border ground between the subjective and the objective.

But passing by the doubtful ground of "we love," a real and most mighty step must now be recognised. That Adam should say to Eve "Thou lovest," which is no longer an emotion of his own, and that Eve should agree to say the same sound to Adam, neither of the two expressing any longer their own individual emotion; but each expressing by the same sound an external idea viewed on opposite sides by the two speakers; this—this—is man's triumph—this is language. This seems to be so enormous a step in the progress of the great kosmos, that it is generally supposed it must have happened simultaneously with another great event, namely, the very first appearance in the kosmos of the being now called man, with bigger brain, shorter arm, and stouter thigh than a set of other beings called apes, who had long been domiciled in the neighbourhood of Paradise. That the apes themselves took this step by the gradually increasing force of their own intellects, during the time that their thighs were gradually becoming stouter, is considered less likely than that the new being was instantaneously fashioned, and instantaneously taught to speak out his ideas. Let us then suppose that man was really so taught at his creation. Let the three lessons of I love, we love, and thou lovest, be supposed well and sufficiently learnt. We must now allow at the very least three years to elapse before the lesson of "they love" can have been applicable, even, in a very infantile and elementary sense; for it is indeed rather preposterous to imagine that when the eldest child was so young as only two years old, any one of the four human beings then in existence should point to two others, and say to the remaining one, "they love."

Now the ordinary view is certainly nothing at all like the supposition that the Deity took three years to teach Adam and Eve the expression by speech of the third person plural. Yet, if we employ ourselves in forming any idea at all of the supposed origin of speech, by a supposed teaching of the first man and woman by a Deity, we seem immediately met by the difficulty that either the man and woman were taught to use words to which they could attach no meaning, and which would be useless to them for at least three years; or that the use of the useful words really taught them did not differ in principle from the use of sounds by cats, turtle-doves, and singing-birds, to express simple emotion.

The same line of argument may be extended further. Supposing that the Adam and Eve were taught the expression for the third person plural before they had need for it, how is it they were not taught the expressions for such ideas as "musical vibrations" and

“electrical current”? The words “electrical current” express a clear definite intelligible conception to a small number of people in this age ; who, by great mental labour have sufficiently rationalised their emotions to enable them to conceive polar molecular forces. Now the conception expressed by the words “they love,” to a supposed Adam, at the supposed moment of his creation, would stand on exactly the same footing as that expressed by “electrical current” now a days. His mind was by the hypothesis a blank or unused one. In such a mind what room can be even imagined for the emotion, “I am jealous,” or “I hate ;” still less for the rationalisation, “they are jealous,” “they hate.”

The long and the short of the matter is, that all rational conceptions are the results of experience, and of a considerable activity in the rationalising mind ; and that in the nature of things experience requires time ; and that if this be once granted the principle of what I am contending for is granted ; for it then becomes a mere matter of detail to know whether Adam took three years, or whether his race took three million years, to learn or be taught the utility of using the sounds, “they love,” and “electric current,” for certain rationalised emotions.

Though I have disclaimed the notion that I am writing on the origin of language, I find that I am at the present moment doubtless comparing the *à priori* difficulties in the two opposing views on the subject. The one view was derived, so far as we know, from the authors of the Persian “Bundehesh,” and transmitted to Europe through the Book of Genesis. Now the Book of Genesis is a very modern book when compared with the period to which authentic history extends. In its present form it was compiled just about half way between the present time and the time when men could build the pyramids. Nor is the “Bundehesh” much older, and if we even take the earliest date ever claimed for the first Hebrew ever named, we still have an indubitable thousand years before Abraham, during which great empires, great buildings, and a large if not a great Egyptian book of the dead existed. Thus the traditionary view must be allowed to be what we may fairly call modern. The essence of it is, that at twelve o’clock on some unknown day there was no speaking man on the earth, and by twelve o’clock next day there was a man able to recognise at least animals, plants, earth, water, and God ; and to use, pronouns, verbs, and nouns, inflected by tenses, numbers, and genders.

The scientific evidence in favour of this view being absolutely none at all of any kind whatever, I compare it therefore unfavourably with the other view now rising into public notice. This view is, that during and after the tertiary geological epoch, the highest mammals then on earth were becoming more erect in their way of walking, less hairy in their bodies, and more like in general to what the lowest men are now. Such beings are supposed during these changes to have also gradually rationalised some of their emotions, by the use of mental power, not so much beyond what the average of them possessed as to presuppose a miraculous development. Not only could a

chief among them say (as brute animals can now say) I love, I hate, I am jealous, we love, we hate, we are jealous, I kill, we kill, but once on a time it is supposed, or supposable, that such a chief, about to strike some beast of prey, with his admiring tribe around him, broke, without a miracle, into a different way of saying, "I kill," which himself and the tribe around understood to mean, "*I will* kill. This, under the excitement of the circumstances, was semi-emotional and semi-rational. Many such semi-emotional, semi-rational states can be imagined. In favour of this view we have the strict compatibility of all the suppositions involved in it with what we see continually taking place in nature; for the step of rationalisation, which I have here imagined, is not greater in proportion to the previous mental power, than many which we often see taken by intelligent creatures under strong excitement.

The subject of this paper is the way in which a community of emotional men would be rationalised by a small number of rational or speaking men. I have nowhere seen the conception clearly expressed that human beings whom we might fairly call mute (as we call animals mute) may yet be thoroughly well able to express to each other their emotions (as animals are.) The presenting this conception clearly to my readers has, I find, taken up a much larger portion of the space usually allotted to a paper than I had expected; but if we can, by this time conceive to ourselves the clever chief of two or three hundred merely emotional inhabitants of a kitchen-midden, struggling into the semi-emotional, semi-rational state of expressing, "*I will* kill," we shall now be able all the more readily to follow such a chief, and his tribe, in the circumstances under which I proceed to depict them.

The advent of the Aryans among such a tribe might be either peaceable or warlike. Tribes of progressive human races (such as the Aryans themselves) are willing to receive physical or mental novelties at the hands of other tribes, but such tribes of men as belong to the unprogressive races are distinguished by their bigoted refusal to accept even benefits at the hands of strangers. Now the two hundred kitchen-middeners I am describing, I assume to be of progressive tendencies, and it is immaterial whether we suppose war, commerce, or philanthropy to have brought into the neighbourhood these half dozen, well-armed strangers whom, in imagination, we now see approaching.

Now see what the leader of these six Aryans is going to do among these two hundred kitchen-middeners, and see how no theory, except that of the mute condition of the kitchen-middeners will allow us to account for his success.

If each party had its own language, it is evident the six strangers would only do just what six Englishmen would do now among 200 Chinese or New Zealanders, viz., each would learn a very small smattering of the other's language, and a lingo would spring up for mere temporary communication; but as to the six imposing their language on the 200, no such event has ever happened in the history of the world. Court terms, warlike terms, scientific terms, and so on, might be imposed, but not the words of daily life.

Now what the six men did was not the mere imposing their words of daily life on the 200, but their words of daily life modified by Grimm's law.

We have in the history of the world many instances where special words (proper names, for instance, and ecclesiastical terms) have undoubtedly been imposed by one speaking race upon another, which has received them with considerable modification of the tongue force or breath force. Episcopus, bischoff and bishop is an example ; but in no instance has any law for these variations been evolved at all approaching to Grimm's law in magnitude, complexity, or universality.

It is very obvious that if the supposed 200 men were mutes, then whatever linguistic influence the supposed six men had on them would take place cleanly and completely at once, say in a week or in a month, at the outside, the essence of the work would be completed ; but if each side were speakers, at least a hundred years would be required, and no such clean result, as is shown by the universality of Grimm's law can be imagined as possible. When the commonest words of all in the invaders' language had been adopted, with a wrong amount of tongue force and breath force, no reason at all would exist for wrongly pronouncing other words not quite so common, and not only pronouncing them wrongly, but with an error following certainly clear and definite rules.

But now assume the 200 to be mutes, and follow the leader of the Aryans in his first lesson to the crowd around him.

Naturally he would get the crowd to pronounce after him some short syllables such as pa, ta, ka, to illustrate the use of lips, palate, and throat, and very naturally the four or five men (or women more likely) just in front of him would pronounce them rightly, but not one man in fifty can tell the real effect of his work on a crowd. On their returning to their wigwams much would be the emotion of risibility and imitativeness displayed that night among the natives ; and next morning the chances are that the majority who stood some distance from the speaker would have fixed for ever upon the whole nation the wrong utterance of ba, da, ga. The main point of my whole argument is that such a result would most naturally follow among mutes, but would never happen among speaking men.

It is obvious that only among mutes such a mistake at the beginning would have consequences spreading over every root in the language in which the tenues letters were initial ; for speakers would of course differ from mutes in paying their principal attention to the meaning, and in being more able to correct each other. Mutes alone would have first to learn the sounds. If a speaking man happened to say father for his teacher's pater, that would no be reason for his also saying fish for his teacher's piscis ; but a mute saying in the first day's lesson f for his teacher's p, would turn all his teacher's p.s afterwards into f.s without exception.

Now we may very readily allow that the leader of the six Aryans discovered early in his second lecture the mistake of his pupils, but we form a very exaggerated notion of the power of human persuasion,

when exerted against savage obstinacy or love of fun, if we think the teacher could undo next morning the result of the previous day's performance. Granting even great nicety of perception in some of the pupils, and great nervous determination to co-ordinate afresh the muscles of the mouth, throat, and chest, in opposition to a twenty-four hours' habit, yet such qualities would never be manifested in the great mass of the crowd. The best thing the leaders could do when their teacher tried to show them their error of tongue force would, no doubt, be done by them. They would screw their faces amidst shouts of laughter into the nearest approach they could manage into what was right, but as to correcting yesterday's error, once irretrievably made, even if they did so themselves it would be too late. Every word which the Aryans began with a *tenuis* would be henceforth and for ever pronounced by the tribe with a *medial*, and it being necessary to discriminate the Aryan's own *medials* from the tribe *medial* too hastily adopted, the natural way would be to give a little variety to the throat force, so that the Aryan *medial* became an *aspirate*. Ba, ga, da, became fa, cha, tha.

I can hardly conceive Grimm's law to have arisen except at once, in a day, at a stroke. If a nation saying *pater*, *pulex*, *pullus*, *pecus*, *duo*, *dens*, *frater*, and *fui*, came among another nation speaking their own language, and the aborigines, repudiating their own words, should intend to take the new words, and by some chance said *father* instead of *pater*, this seems to me no reason why, as they gradually went on to learn all the new words, they should also, in strict accordance with a law of error, say *flea*, *fowl*, *fee*, *two*, *tooth*, *brother*, and *be*. If, however, the aborigines, wishing not so much to say at first certain words, as to use their organs of speech aright in pronouncing certain sorts of words, should at starting make a mistake in the use of their organs, this, and this alone, seems to me an origin from which Grimm's law would arise.

To sum up. I assume it as now recognised, that Europe contained a considerable population, spread over considerable areas, in the days of woolly elephants and rhinoceroses. These men had musical instruments, needles, fish-hooks, and many weapons. They could draw on ivory. I have argued, that, in order to exist, these people must, of course, have had some means of expressing their wants and emotions. But articulate language is by no means requisite for this; however indispensable it may be towards expressing ideas and the ratio of ideas, articulation, I say, is an instrument of the intellect, but not of the heart. My second argument is that these people must have learnt language not by slow degrees, but in a day, at once, at a single step. Else I say the phenomena of Grimm's law could not have arisen, and I have endeavoured very briefly and imperfectly to indicate how a few speaking men coming among these primitive people might have set about the task of getting speech into them. Let some better theory than my own be propounded. At present there seems none other which professes to account for Grimm's law.

The CHAIRMAN proposed that thanks be given to Mr. Heath for his very learned and humorous paper.

Mr. PIKE said he had listened to the paper with mingled pleasure and pain. It presented two aspects, one literary, the other scientific. In its literary aspect he was charmed with the paper; in the other, he was sorry that it had been read. Regarded as a literary production every sentence was clear and delightful, and he could not help wishing that Mr. Heath had confined himself to writing a romance on the "murmurings of the mutes," for as a scientific hypothesis it would not bear examination. It was expected from a scientific hypothesis that it should explain something, but it did nothing of the kind. Mr. Heath wished them to believe in the existence of mute races of mankind, because there was said to be a law called Grimm's law, with which such an hypothesis would agree. But all the phenomena of variations of language might be explained on the supposition that different races of men taught their languages to other men who had a language of their own. As an illustration of the changes which a language may undergo when spoken by a foreigner, Mr. Pike repeated an English sentence as pronounced by a bookseller from whom he recently made a purchase, in which nearly every consonant had a different sound from its English pronunciation. This man, he said, might possibly have been one of Mr. Heath's mutes, but he believed him to be a German; and when it is found that foreigners at the present day with a language of their own, make such alterations in the pronunciation of English words, he could not see why other speaking men at more early periods should not have made similar alterations in what Mr. Heath called the Aryan language. It would be very difficult, consistently with his theory, to explain how the Basque language came to be spoken in the Basque country. Then, with regard to the progressive steps by which, according to Mr. Heath's hypothesis, reasoning power was acquired by man after vast periods of time, there was a contradiction because, though it was said to require an immensity of time to develop the reasoning power of man, Mr. Heath would have them believe that mutes would be able to speak in a day. How could the Aryans have taught the mutes such words as "mind," "one hundred," or any words expressing abstract ideas. Modern travellers find great difficulty in teaching savages things much less difficult than those. It was hard to believe in the six Aryans who were supposed to have taught their language to two hundred mutes. It was a charming picture, but he was compelled to reject it as altogether improbable. It was as unlikely as that a ship's crew landing on the Coast of Africa should attempt to teach gorillas to speak English. Neither was there any tradition to support such a notion of the teaching of language. In the only traditions on the subject the communication of the knowledge of language was attributed to some kind of God; an instance of which occurred in Horace, which passage he recited. There was no story extant about six Aryans having imparted language to mutes, but all traditions of the kind referred to some one God. He considered the paper to be of no value in a scientific point of view. It said nothing about the origin of language, and referred principally to Grimm's law. But there were other things to be considered of more importance than Grimm's laws. He would not say that he was inclined to think the paper a hoax, but

that it was intended to satirise certain philologists who are not yet sufficiently advanced to give up language as a test of race. The fact that Mr. Heath had read such a paper at a meeting of the Anthropological Society showed that there was a strong reaction against prejudice, and in such reaction there was great danger of its being carried too far; for unorthodox rashness was as dangerous to the progress of truth as orthodox conventional timidity. Therefore, he raised his voice against Mr. Heath's hypothesis for the purpose of showing that that Society was not ready to receive any theory merely because it was unorthodox.

Mr. MAC GRIGOR ALLAN agreed with Mr. Heath in thinking that the first men must have been mutes, and must have learned speech, as everything else, by slow degrees.

Major OWEN moved the adjournment of the discussion, which was seconded by Mr. CARTER BLAKE, and carried.

The debate was then adjourned to the 15th of January.

JANUARY 15TH, 1867.

T. BENDYSHE, ESQ. V.P., IN THE CHAIR.

THE minutes of the last meeting were read and confirmed.

The names of the following gentlemen who had been elected Fellows of the Society were read:—Henry Leighton, Esq., 53, Upper Seymour Street, W.; Henry Coates, Esq., Civil Service, Chelsea.

Local Secretary.—J. G. Taylor, Esq., H.M. Consul at Erzroom.

The presents to the Library and Museum were announced as under:—

From K. R. H. Mackenzie, Esq., F.S.A., F.A.S.L.—Documents relating to Puritanism in New England.

From an anonymous Donor:—

The Natural History of Man.

Man a Machine. By LA METTRIE.

Histoire naturelle de l'homme et de la femme. By DEBAY.

Reflections on Polygamy. PHILALEUTHERUS.

From the Author.—Über art und race des Zahmen Europäschens rindes. By Prof. RÜTMEYER.

From Mr. J. Ayres.—Map of Africa.

The DIRECTOR stated that a letter had been received from their recently elected President, Capt. Burton, now in Brazil, and they would be glad to know he was working for the Society in that country. Dr. Hunt also announced that he had received a letter from Mr. J. Meyer Harris, from Liberia, where he had procured a large collection of skulls for their museum, which he hoped to be able to bring in the course of the summer. A letter had also been received from Mr. Walker, dated November 14th, from the Gaboon, where he had collected a large number of specimens for the museum, which were expected in March next, and would then be exhibited.

Extracts from the letters of Captain Burton, Mr. Harris, and Mr. Walker, were then read as follow :—

“Santos, S. Paulo, Brazil, Dec. 2, 1866.

“SIR,—I have the honour to enclose extract from the *Anglo-Indian Times*, published at Rio de Janeiro ; and I should be much indebted to any members of the Society who could assist in forwarding my views.

“The preliminary studies of Brazilian anthropology have been too severe to allow me leisure for travelling. Having now, however, mastered the theoretical part of the subject, I hope without delay to visit the wild Cayaras in the valley of the Tieti, and at no distant period the Amoris or Botocudos, near Bahia.

“I am, sir, your obedient servant,

“RICHARD F. BURTON.

“The Secretary, A.S.L.”

“Monrovia, Liberia, Dec. 10, 1866.

“MY DEAR DOCTOR,—I have been some time in the Bush, but hope to be home by the February mail. I have not forgotten the Society since I have been away. I have seven or eight different skulls, and am in hopes of getting a complete skeleton for the museum. I have been in a splendid country for collecting specimens ; they have been having a great go in at chopping one another up. I have been trying to get a skull of a tribe of cannibals that live in the interior near here, but have not been successful ; they are too careful of their precious craniums. I have heard lately of a monkey, which I am led to believe is the gorilla, or something like him. They go in tribes of twenty to thirty, walk on their hind legs, occasionally use a stick, and are not afraid of a man ; they are to be found on the Cape Mount, a hill of some height. I intend having a crack at one if I can make their acquaintance. There is also something else on the top of the mount, that may perhaps prove more interesting to the Society and yourself ; that is, some graves that are said to be fifteen feet long. I cannot imagine what they contain. They are very old, as the oldest man in the country, who is quite a century old, remembers them, when a boy, being spoken of as the old people's graves. I intend to dig one up on my return that way ; and if I find a mare's nest, you shall have it as a set-off against Du Chaillu's 3 ft. 6 in. men, which Mr. Crawford could not digest. I trust the Society is as prosperous as it deserves to be ; and I am happy to say I think the anthropos are beginning to be appreciated in Africa.

“I am, yours very truly,

“JOHN M. HARRIS.

“Dr. James Hunt.”

Extracts from a letter from R. B. N. Walker, Esq., F.A.S.L., Loc. Sec. A.S.L. for Gaboon.

“Glass, Gaboon, West Africa, Nov. 17, 1866.

“MY DEAR SIR,—I deeply regret to say that I fear a second, and far more serious, loss has occurred ; one, in fact, quite irreparable. Finding

a vessel at Camma upon my arrival there in August from the interior, I immediately shipped the majority of my best and rarest specimens, collected in the interior, by her; she had to call at Benin, and was there wrecked, and I fear that my case must have been lost. Luckily I retained a few, and also the articles procured for the Society's museum, which will be despatched by the *Minerva*, and reach home about March next. I am obtaining the aid of every one whom I can press into the service to collect skulls, etc. Hitherto I have had but little success; but I hope that next year may produce a better harvest than this has done.

"I have not yet found it possible to prepare a paper for you, but may hope to send one to accompany the articles for the museum.

"I have addressed a complaint to the French admiral concerning the conduct of the carriers who plundered and deserted me last February. He has left here to-day, but has given instructions to the commandant to act in the matter; and, as the people are French subjects, and a steamer can reach their village, I hope in my next to be able to give you the news that they have been punished, and perhaps made to hand over some ivory as a recompense for the loss of my goods. The ruin of my expedition is now past recall, but I shall try again.

"Believe me, my dear sir, very truly yours,

"R. B. N. WALKER.

"James Hunt, Esq., Ph.D., 4, St. Martin's Place, London."

The CHAIRMAN observed, in reference to the letter from the President, that the Society might be assured that what Captain Burton said he would do, would be done. It was satisfactory to find that the science of anthropology was spreading rapidly over the world, though it was but of yesterday.

The DIRECTOR announced that the Council had determined to put in force a resolution passed some time since, to appoint Lecturers in various departments of science, and to advertise that they were ready to receive propositions for lectures. He hoped, therefore, that they should soon have popular lectures delivered before the Society. The Council had also thought it desirable that, as a month had elapsed since the reading of the Rev. Dunbar Heath's paper on "Mute Societies of Man", which was to be discussed that evening, that he should be requested to give a short account of the principal features of his paper.

The Rev. DUNBAR I. HEATH then gave a *resumé* of his paper, read at the ordinary meeting on the 18th ult., and contended that his theory was the only one by which Grimm's law could be explained.

Mr. McGRIGOR ALLAN said: I am desirous of supporting the main hypothesis of the Rev. Mr. Heath's paper, as I understand it—that the first men must have been mutes; that the use of language (like all other human arts and inventions) was gradually acquired by man himself, without any external supernatural aid. This, I conceive, follows logically and inevitably from the Darwinian theory as applied to the origin of man. If we derive man from an animal, and suppose

his primitive condition barbarous, I think it self-evident that he had at first no language, and could, indeed, have had no use for language, until the "struggle for existence" had raised him above the meaner creatures, given him sufficient time to observe and think, to collect ideas more complex than those which many animals are capable of forming and conveying to one another. This grand, most interesting, most important question as to the primitive condition of mankind, is assuredly not to be settled by an off-hand sentence like this: "If placed in the beginning in the savage state, could man ever have escaped from it?" I should like an answer to this question. If placed originally in the civilised state, how and why has man so obviously retrograded from it, that we can see in the present condition of humanity every phase of the long scale from barbarism up to high civilisation? It is absurd to attempt to base an argument on tradition carrying us back to a time of "idyllic innocence and intellectual supremacy." What are traditions of three or four thousand years, compared with the actual period of man's duration upon earth?—not even as yesterday in the life of an aged man! We have no records of the beginning of civilisation, for the very satisfactory reason that man must have advanced tolerably far in civilisation before any such records could commence. No man can record from personal experience the history of his own infancy; and, in this respect, all mankind resemble the individual. When we reflect on the progress of nations from a condition of barbarism, and observe the grand strides man has made and is making in every department of science, art, mechanics, simply by the use of his own faculties, why should we find it impossible to conceive that man (who may be still unconscious of his latent abilities) was able to raise himself from the condition of a savage without external aid? The doctrine of special creative fiat to account for the enormous variety of species, is rapidly giving way before that of development, of transmutation of species, of continuity, ably displayed by the President of the British Association, who, in his address at Nottingham, observed: "The more the gaps between species are filled up by the discovery of intermediate varieties, the stronger becomes the argument for transmutation, and the weaker that of successive creations; because the former view thus becomes more and more consistent with experience, the latter more discordant from it." The weight of scientific testimony seems now tending towards the opinion that man has not originated by a method apart and distinct from that of other animals, but that he owes his origin to secondary causes, and is as much the outcome of the orderly working of natural law as the meanest weed, zoophyte, or insect. Why, then, should we be perplexed at the origin of speech, or have recourse to a special intervention of supernatural agency to account for that phenomenon? Mr. Allan then proceeded to quote Lawrence, Hobbes, and Gibbon, in support of his argument. Language, in its most comprehensive sense, the communication of ideas, is by no means confined to man. As the animals preceded man, there was language on the earth for an immense number of ages before man existed. The greater number of animals have a silent language, by which, in addition to their vocal

organs, they can communicate with, and apparently thoroughly understand others of their respective species, besides making their wants, wishes, and emotions known to man. As men who live much with animals, and study their habits, soon learn to read the language of their various cries denoting pleasure, pain, surprise, grief, anger, etc., it may be said that we see among the lower animals an approach towards articulate language. The fact that some animals can be taught to pronounce words and sentences by rote, only proves the possession of the physical capacity of speech. Let us admit that the faculty of rational articulate language is the characteristic of man alone. But human speech is broken up into some thousands of languages, and the vast majority of human beings are confined to the use of one—that which each individual learned *unconsciously* in childhood. To such a person all written or spoken words of all other languages, except his native tongue, convey no ideas whatever. If he desired to hold communion with a foreigner, he must do so through an interpreter, or by picture-writing (which probably preceded all written characters) or have recourse to that language common to man and animals, the language of the eye, of gestures, and inarticulate cries. When we remember the “six plans of language,” amongst which no sort of community can be shown—the many and great distinctions between the full and copious language of highly-civilised nations, and the jargon of low cannibal savages; also that some human beings are born dumb, that others stammer, and have various natural and artificial imperfections in speaking, so that *articulate* speech is *not* a characteristic of *all* men; we possess indirect evidence that man has acquired the use of speech gradually, and that man probably descended or ascended from what is called a dumb animal—that is, an animal not having the faculty of articulate speech. I confess that I am astonished at the attempt to beg the question of the method of man’s origin by representing his primitive mute, barbarous, ape-like condition, or even his transmutation from an ape, as being in the slightest degree degrading to man. What is man that he arrogates the right of sitting in judgment on his fellow animals, and assuming as a self-evident proposition an origin utterly distinct and apart from theirs? Man’s lowly origin is not only quite consistent with his present acquired superiority to the rest of the animal kingdom, but actually favours by analogy the orthodox theory of the glorious destiny awaiting him. “Human beings,” observes Dr. Carpenter, “existed long before the religious sentiment could be developed—when man had no sense of duty, no shrine for worship, no knowledge of God, no thoughts of heaven or hell.”

Dr. CHARNOCK said the paper was comprehensive, embracing, as it did, philology, physiology, anatomy, theology, humour, and romance. Mr. Heath had omitted, in his *résumé*, to notice one of the most remarkable points of the paper, viz. the story of the six Aryans who were supposed to have taught language to two hundred mutes. Where the Aryans came from was not known. They were found at the kitchen-middens in Denmark, where there were two hundred middeners, who lived upon oysters, and were mutes. We were led

to suppose that the six Aryans there set up a school to teach language to these mutes, and that when the Aryans said *a, b, c*, the middeners called *x, y, z*; upon which the Aryans said it was good, and it was good. He thought it much more reasonable, when the middeners made an error, that their masters should have endeavoured to correct them, than that they should have perpetuated such error. But why should not the middeners have had ideas and perceptions before the advent of the middeners; and if so, why should they not have taught themselves? He thought the theory was wrong; for it was more probable that the Aryans and their language would have become merged with the middeners and their language; and if so, there never could have been an Aryan heresy at all.

MR. CHARLESWORTH observed that it was a question which involved an extreme amount of speculation; and that he must be a bold man who attempted to grapple with it. Nevertheless, there were one or two points in the paper on which he desired to say a few words. The author of the paper had omitted to consider the condition of language in its present state among people of the lowest type; among the Andaman islanders, for example, and the aborigines of Ceylon. If anything were known of language there, how far did it elucidate the theory of Mr. Heath? Was it in its original state, or was it degenerated? With respect to the emotional sounds of the lower animals, the author of the paper might have gone further into the subject. An opposite theory had formerly been propounded, according to which all creatures were originally gifted with speech. Dr. Adam Clarke, for instance, conceived that the larger apes had once that gift, and he inferred that the reason why they do not speak now was that it was an ouran-outan and not a serpent that tempted Eve, and that the gift of speech was, therefore, taken from apes as a punishment. It was, indeed, a curious fact that the lower animals which approximate most to man in form recede farthest from him as to the power of speech. Canaries speak more perfectly than any other creatures, parrots and other birds are also well-known to articulate, but the anthropoid apes make noises utterly unlike human speech. He suggested that an effectual way of determining the question whether man was naturally mute would be for the Anthropological Society to bring up a colony of infants before they could articulate; that no words should be spoken within their hearing, and then it might be seen whether the development of speech was natural or supernatural.

MR. C. CARTER BLAKE said he was not aware of any anatomical difference between man and ape that could affect the power of speech; and, therefore, that question must be put aside. With respect to the theory of Adam Clarke which had been disinterred by Mr. Charlesworth, in which Satan was metamorphosed into an anthropoid ape and put into Paradise, the facts of natural history were directly against it. Anthropoid apes do not exist in Arabia nor in Persia, but exist naturally only in tropical regions. There was no geological evidence from which it could be inferred that there were ever any apes approaching man more nearly than the fossil gibbons of the Miocene

strata which existed in Europe, Asia Minor, and two small species in the south of France.

Dr. BELL thought Mr. Heath's theory was not quite new, and he referred to Howell's *Cambrian Mythology* as indicating the existence of mutes in Wales. It was therein stated that the Welsh were much troubled with ouran-outans, and that the English with their guns caused much slaughter among them, and the Welsh for their protection determined to wear a leek to distinguish them from the ourans. With respect to the notion of bringing up infants without allowing them to hear the human voice, that was not a new experiment. It had been tried in Egypt by Psammitichus, who had two infants fed by goats and not allowed to hear human speech. The first articulate sound they uttered signified bread in the Egyptian language, and it was, therefore, inferred that that was the original language of man.

Mr. A. L. LEWIS suggested that the Society should establish a colony of ouran-outans, and that Mr. Heath should teach them to speak. He thought his theory was not in accordance with known variations in pronunciations among different people. The peculiar pronunciation of English by the Yankees, for example, could be accounted for by other means than by supposing them to have been originally mutes; and he thought that other changes of language might be similarly accounted for. Mr. Heath had also said that Adam, not having sufficient of his own species to talk to, must have been at least three years before he could have arrived at the third person plural; but he had forgotten that Adam could speak to the animals in the second person, and of them to Eve in the third plural. The statements made in the book of Genesis were therefore not inconsistent upon this point.

The CHAIRMAN observed that there was this objection to the opinion of Adam Clarke respecting the tempter of Eve being an ouran-outan,—that the serpent was said to have crawled on its belly, whereas apes go along upon their arms and legs. As to the story about Psammitichus bringing up infants, he believed that the words children would utter under such circumstances would be imitations of those made by the goats that fed them. If such an experiment as suggested by Mr. Charlesworth were tried it would be necessary to get mute women to suckle the infants, to render it at all satisfactory. The chairman said ironically that he should be happy to subscribe to a mutual bastard society, in the hope that the children of the Anthropological Society might be made the nucleus of a new race. With respect to the proposal that Mr. Heath should bring up a colony of ourans, he should say, first catch them.

Dr. MANN, of Natal, mentioned a circumstance bearing on the subject under discussion. He said he had occasion to see a clever girl of the Zulu Caffre race who refused to learn to speak English because she said it would turn her tongue crooked. Having been among the Caffres for a considerable time, he took much interest in watching their various expressions. He felt convinced that the rude languages of man are connected with their wants, and thus in the course of time those languages rise higher and higher. He had much doubt about the theory that human babies are mutes. He thought they had a

language of their own, and that much might be learned respecting the origin of language by observing infants in their early state. The progress of language he considered was naturally upwards instead of having a downward tendency.

Dr. DONOVAN said that a very narrow view of the subject appeared to have been taken. The question was, has man the faculty of speech or has he not? The author of the paper had committed a grand physiological error. He said the organs of speech are the palate, including the teeth, and the moveable parts of the throat. He (Dr. Donovan) denied that these are the organs of speech, or that they have anything to do with the origin of the power of speech. They have the same relation to speech that the trumpet has to the tune that it plays. The power of speech depends on the faculty of speech which is a natural power, without which all other powers would be given to man in vain. Infants if they never heard any words uttered would find a language of their own, and the experiment was made daily before our eyes. There are communities of people who were born deaf and speechless; but they generate a kind of speech to communicate with one another. The faculty of speech is so irrepressible, that it stands forth and asserts its power. This faculty is clearly and distinctly traced to the brain, and without it no art could communicate speech to man any more than to a dog. If Mr. Heath would acquire a knowledge of mind, and study the mind and brain of man, he would not have misspent so much time in writing on a subject which might be made as plain as the day. Man is a speaking animal. All men have language, and it was as irrational to ask whether a man has the natural power of speaking as it was to ask if he had the natural power of seeing. Dr. Donovan also made some remarks about phrenology having been neglected and despised by the Anthropological Society.

Dr. HUNT said the discussion of the subject brought before the Society the most difficult question of the origin of language, on which science threw little light. In the remarks of Dr. Donovan he confined his views of language to the power of speech. That was distinct from the subject of the paper, which related to the causes of the different languages in Europe. The consideration of the circumstances of the changes of language had nothing whatever to do with the general faculty of language. That there is a peculiar faculty of language situated in the brain was perhaps a fact, for tumours and other affections of the brain sometimes took away the power of utterance, and showed that there were certain organs in the brain, the injury of which affected speech; but that did not affect the general question. The question before them was, how to explain the origin of the differences of language according to Grimm's law. The paper of Mr. Heath was an attempt to explain it. He (Dr. Hunt) had no opinion to offer on the subject, for it was one of the most difficult that could be brought before them. He thought, however, that the discussion had not done justice to the paper. Professor Max Müller thought the explanation it afforded of Grimm's law was very ingenious, and he had nothing himself to offer in explanation of it; nor had any other gentleman

offered one. Mr. Heath brought before the Society his theory which he said explained the facts, and the meeting ought to feel much obliged to him. He (Dr. Hunt) protested against the remark of Dr. Donovan that he belonged to the despised class of phrenologists. On the contrary, he thought phrenology was a subject which ought to be thoroughly investigated, and Dr. Donovan was not right in saying it was despised by the Anthropological Society. If the advocates of phrenology founded those arguments on facts they were deserving of all respect; but if they brought forward assumptions as facts they might be laughed at, but it did not follow that therefore phrenology was despised.

Dr. DONOVAN rose to explain. He said it was well known that he had devoted much of his time to the study and practice of phrenology, and that when he offered himself as a candidate for election as a Fellow of the Anthropological Society he was black-balled.

The CHAIRMAN objected to the introduction of such a subject. He said there might have been personal or various other reasons which influenced Fellows to vote against Dr. Donovan, and not because they despised phrenology. He himself had great respect for phrenology. He did not despise it any more than he despised religion.

The Rev. DUNBAR HEATH then replied briefly to the remarks of the various speakers. With respect to Dr. Charnock, that gentleman did not deny that there was an enormous tract of country inhabited by a people who had a language in which the commonest words of life were identical, but the whole of whose consonants have been changed. That would explain how a superior race with the practice of speech might impart it to those who had not that practice. With regard to the remark that the teachers would have put them right when they pronounced incorrectly, he observed that a civilised being who wants to make use of a rude people would not be very careful whether his pronunciation was correctly acquired by the crowd, and he could not put them right. The word "pisces," for instance, might be pronounced "fisces," and all other words beginning with "p" might be pronounced "f." He was disappointed with Mr. Blake's speech. What he wanted to know was, are the higher lobes of the brain connected directly or indirectly with the sensory nerves? He admitted the existence in the brain of the germ of the faculty of speech. Dr. Bell had supposed that the Aryans might have come from the west and not from the east, but that was a point altogether indifferent; he did not know where they came from. Certain peculiarities of pronunciation of individuals which had been mentioned did not affect the general question. They were little changes of no consequence, but the changes to be accounted for by Grimm's law were changes in the roots of words themselves. As to the Zulus and the question whether language progresses upwards or is deteriorated, neither view would militate against his notions regarding the kitchen-middeners. Then it was asked why, if the middeners had the faculty of speech, they did not speak? It might as well be asked why, if a man has the faculty of understanding musical vibration and the meaning of electrical currents, he did not know about them 1800 years ago. Musical vibration was a highly

rationalised idea, and the mind might gradually advance to other and higher rationalisations.

Thanks were then given to the Rev. Dunbar Heath for his paper, and the meeting adjourned.

FEBRUARY 5TH, 1867.

DR. CHARNOCK, V.P.A.S.L., IN THE CHAIR.

THE minutes of the preceding meeting were read and confirmed.

The following Fellows were elected :—Charles Donald Maclean, Esq., Mus. Doc., B.A., Madras Civil Service ; John Leigh Wilson, Esq., C.E., Piddington House, Warrington, and Madras ; Robert Reid Kirkwood, Esq., Gaboon, West Africa, and Glasgow ; George Harcourt, Esq., M.D., F.R.C.S., Chertsey, Surrey ; Luke Burke, Esq., 5, Albert Terrace, Church Road, Acton ; David Mackintosh, Esq., F.G.S., Taunton, Somerset ; Hector Maclean, Esq., Ballygrant, Islay, North Britain.

The following presents were received, and thanks were voted for the same.

FOR THE LIBRARY.

From T. Bendyshe, Esq., M.A., V.P. A.S.L.—Bibliothèque Universelle des Voyages. Six vols. By BOUCHER DE LA RICHARDERIE.
Conservation, revolution, et positivisme. By E. LITTRÉ.
La chimie enseignée par la biographie. By F. HOEFER.
Histoire naturelle de l'homme et de la femme. By A. DEBAY.
Histoire des sciences naturelles au moyen age. By F. A. POUCHET.
Histoire des progrès des sciences naturelles. By G. CUVIER.
Philosophie zoologique. By J. R. LAMARCK.
The Pedestrian. By C. J. LATROBE.
Evidences of Christianity. By W. PALEY.
Fables. By LOKMAN.
Eunapii Vitæ Sophistorum. By BOISSONADE.
Principle of Population. By T. R. MALTHUS.
Libanii Sophistæ Epistolæ. By WOLFF.
Works of Philostratus. By OLEARIUS.
JULIANI imperator opera et S. Cyrilli contra eundem libri 10.
Gerusalemme liberata. By T. TASSO.
Recherches sur le climat et la vegetation du pays tertiaire. By OSWALD HEER.
Journal of the Ethnological Society of London, vol iv.
On the Plurality of Worlds. By WHEWELL.
Trattato della pittura. By LIONARDO DA VINCI.
Crania Britannica (V Decade only). By DAVIS and THURNAM.
Wonders of the little world. By NATHANIEL WANLEY.
Alabaster Sarcophagus of Oi Menephthah. By BONOMI & SHARPE.
Versuch die metamorphose der Pflanze. By J. WOLFGANG GOETHE.